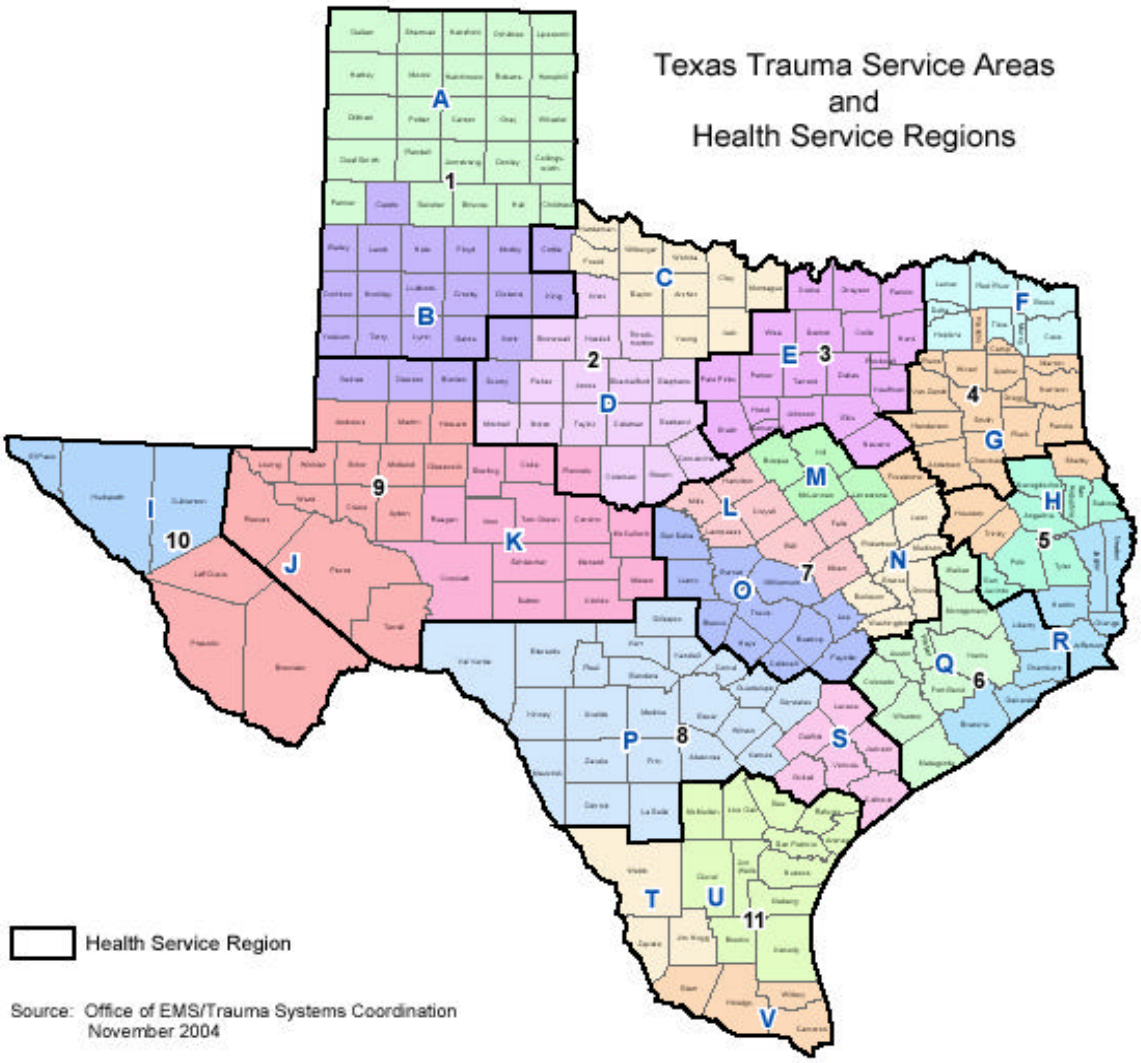
into new standards of care for cardiac victims. Cardiopulmonary Resuscitation (CPR) became the focus of a new public education drive, and the American Heart Association (AHA) came out with an Advanced Cardiac Life Support (ACLS) course that increased the impact that prehospital personnel can have on cardiac patients. Through these and many other changes, EMS was identified as an integral part of the healthcare industry. Members of local government and the medical profession were called upon to take steps necessary to lay the groundwork for a standardized, unified prehospital system which would provide care across the nation.

In Texas, EMS is regulated through the Department of State Health Services (DSHS). Texas is also divided into Health Service Regions (HSRs), identified numerically from 1-11. The EMS field offices in these regions are staffed by DSHS employees. Their responsibilities include providing technical assistance to the EMS certificants and EMS providers in the regions, conducting inspections and assisting in the regulatory responsibilities of Texas DSHS.

In addition, EMS is an integral part of the Texas Trauma System. The Texas Trauma System began developing in 1989, after passage of the Omnibus Rural Health Care Rescue Act. Designed to help rural areas gain access to urban resources, that legislation ultimately led to the division of Texas into 22 Trauma Service Areas (TSAs), identified alphabetically from A-V. Regional Advisory Councils (RACs) have been established in each of these TSAs. The function of the RACs is to develop and improve emergency and trauma health care in the state. Website: www.tdh.state.tx.us/hcqs/ems/Etrarac.htm (See map on page 8.)

Challenges facing EMS in Texas

The health care system in Texas provides care to one of the largest and most diverse populations in the country, bordering four states and Mexico. Texas has a population total of 22,118,509 people (www.quickfacts.census.gov/qfd/states/48000.html), making up almost 8 percent of the total United States population. Additionally, Texas has a population of approximately 3.2 million people residing within 210,663 square miles in rural and frontier counties. Residents of Texas communities, as well as the growing influx of visitors, depend on local EMS systems to provide prehospital care and transportation, including the



diagnosis and treatment of traumatic and emergent medical conditions.

Rural Texans have significant geographic barriers to overcome. Vast distances between communities, combined with the great distances to urban areas that provide advanced health care, hinder the deliverance of life saving care for the sick and injured.

To add to the already growing problems for prehospital providers, there is the problem of the language barrier that can at times be detrimen-

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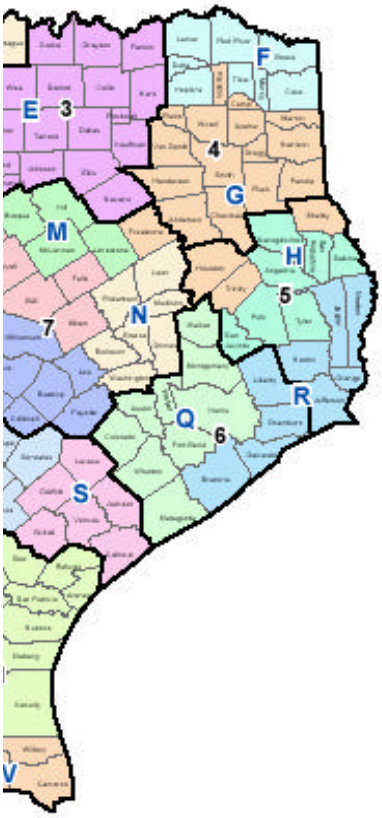


tal to patient care. Language barriers between patient and prehospital health care providers are a significant problem in south Texas, especially in the border communities, where Spanish is commonly spoken, and in urban areas with a high immigrant population. The Texas Workforce Commission has reported that bilingual and Spanish-speaking residents comprise more than 20 percent of the population of rural Texas.

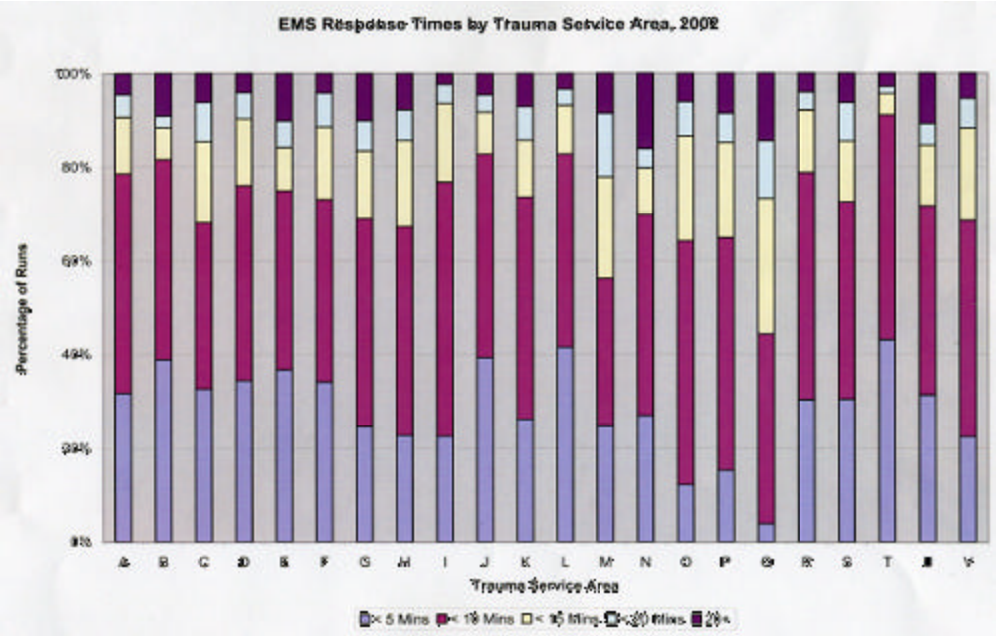
According to the Texas Board of Medical Examiners 2003 data, the number of physicians practicing in urban areas is more than eleven times as high as in rural/frontier areas. Residents living in these rural/frontier areas of Texas have less access to specialized care in cardiovascular diseases, emergency medicine, geriatric and pediatric specialties, and primary care medicine than do residents in the more densely populated urban areas. Most rural residents must travel far from home for medical care and stabilization.

The majority of challenges faced by EMS providers can be placed into one or more of the following four categories:

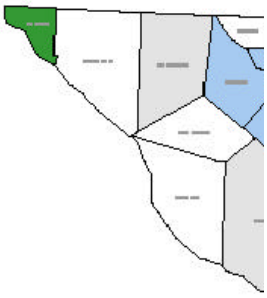
- Recruiting and retention of employees.
- Providing adequate initial and advanced training, as well as continuing education. *This includes medical personnel as well as administrative and managerial personnel.*
- Acquisition and maintenance of needed equipment.
- Adequate funding.

Salaries for EMS personnel are low, especially in rural and frontier areas, while the cost and time required to meet educational requirements can be high, so an individual interested in attending an EMS course must take into account what it takes to become certified (www.tdh.state.tx.us/hcqs/ems/scertlic.htm). There are many hardships, including the financial costs and time away from their families. Additionally, the travel distance and time involved, especially in rural and frontier areas, can be prohibitive (www.tdh.state.tx.us/hcqs/ems/jobdesc.htm).

Recruitment can be difficult in rural/frontier Texas because of a dependency on volunteer EMS personnel. Only 20 percent (3,000) of the approximate 15,000 paramedics in the state provide services in areas



designated as rural or frontier. Approximately one-third of Texas EMS personnel are volunteers and work at least one full-time job in addition to volunteering, with the majority of these jobs being non-health related.



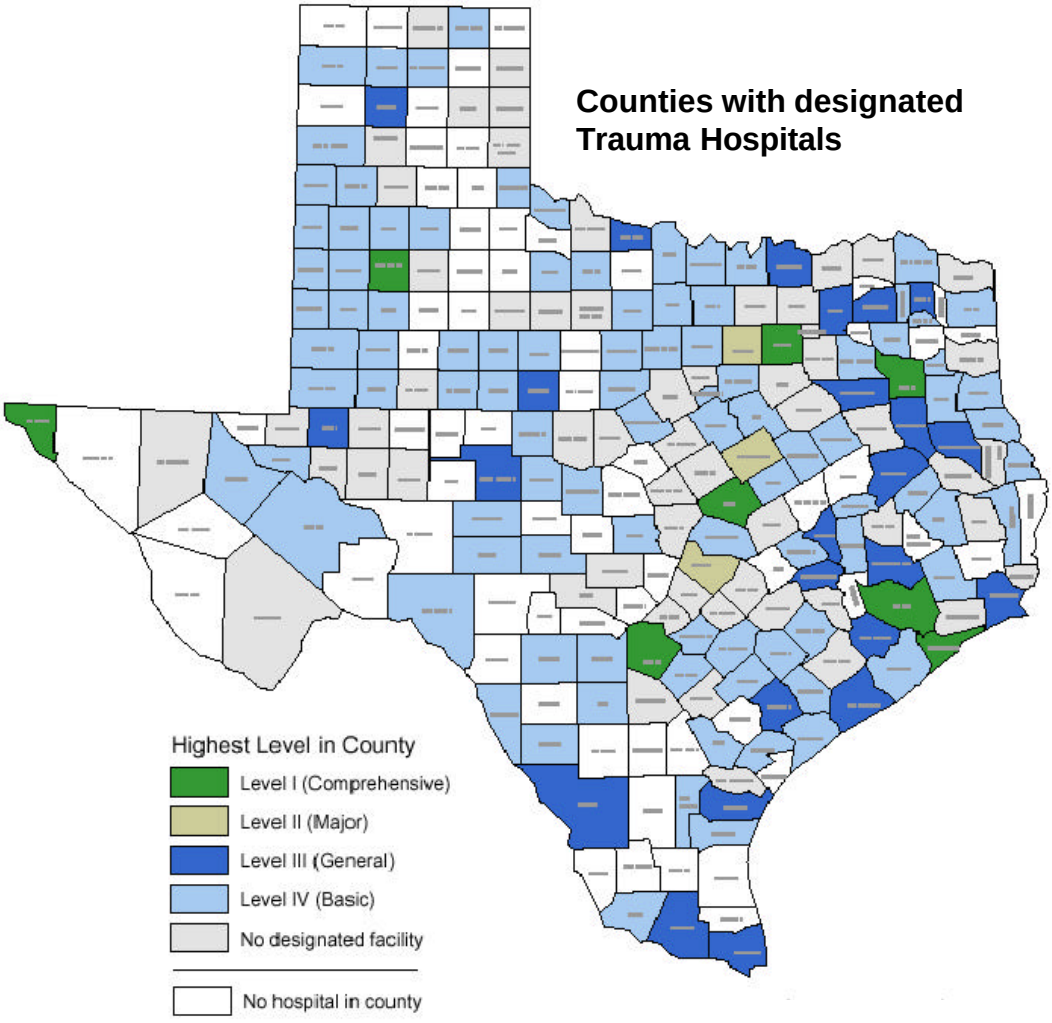
Challenges to employee recruitment and retention in urban areas include high call volumes, rapid job burnout and a high turnover rate of employees. Add in the daily traffic congestion and related transportation problems and it is easy to understand their dilemma.

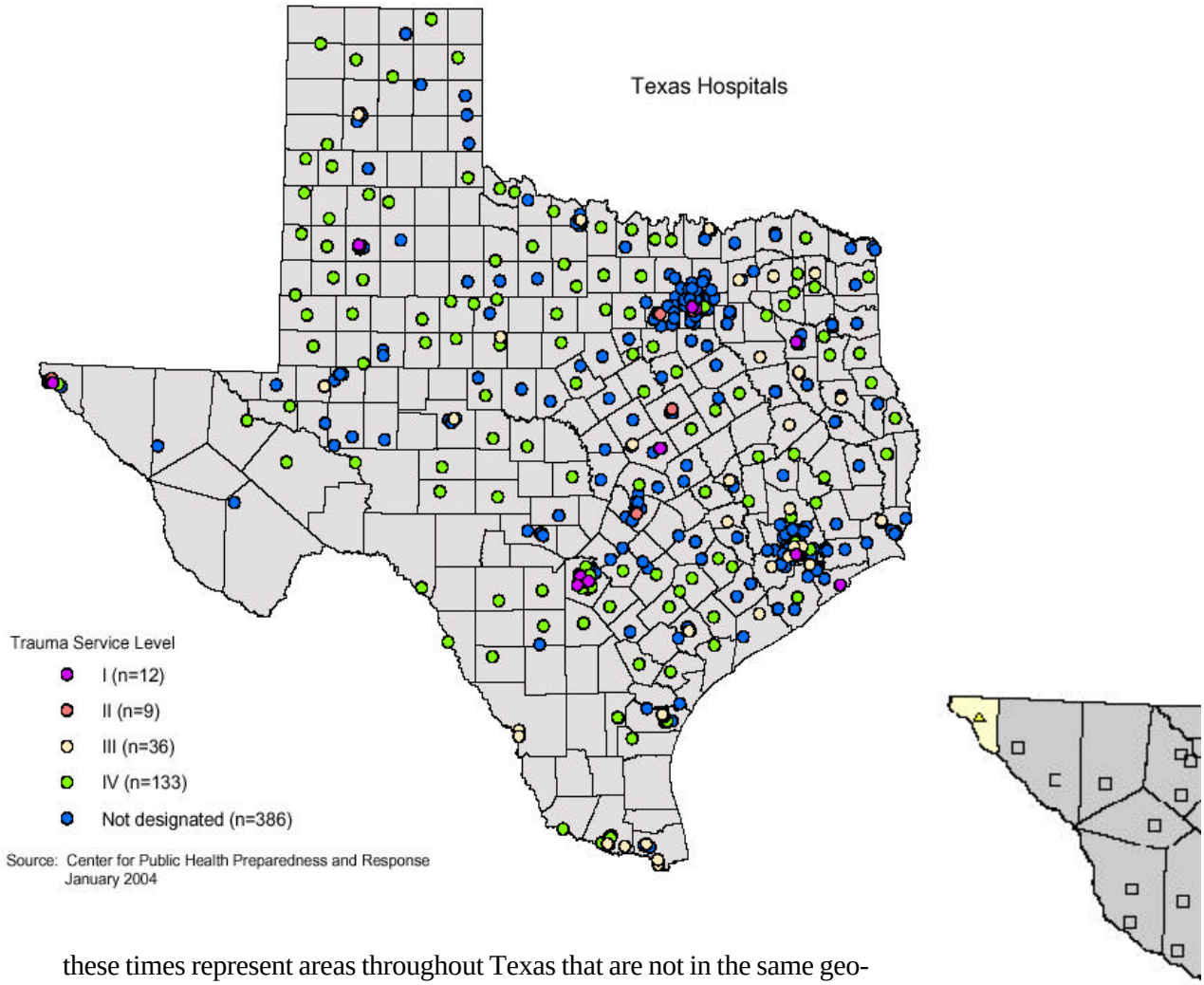
Specific to rural and frontier Texas, problems such as the lack of training, especially advanced training, and the inability to purchase equipment vital for the appropriate provision of emergency medical care, are resulting in the decline of certified and licensed emergency medical service providers in their regions of the state. Many ambulances are old, and costs to repair them are becoming prohibitive for the smaller departments.

Adequate funding affects EMS across the state regardless of location. All EMS providers have seen an increased demand for services, without a corresponding increase in funding, either from taxes or other sources of funding such as grants. Funding affects every aspect of providing adequate EMS, from purchase of equipment to training for street medics.

Many acute injuries or illnesses are time dependent, meaning the

prognosis for survival is dependent on how rapidly the patient can get to the appropriate facility. According to data collected by the Texas Department of Health Bureau of Epidemiology (now a division of Texas DSHS, Texas EMS/Trauma Registry, www.tdh.state.tx.us/injury/), there are areas throughout frontier Texas that have patient response times of up to 136 minutes (2 hours and 16 minutes) and hospital transport times of up to 132 minutes (2 hours and 12 minutes). What makes matters worse is





these times represent areas throughout Texas that are not in the same geographic location. In addition, 157 of the 254 Texas counties currently have response times in excess of 10 minutes, while 151 counties have transport times greater than 20 minutes.

The rural and frontier areas of Texas are also less populated with designated trauma centers. Most hospitals are very small and have difficulty obtaining and maintaining trauma designation due to the associated costs. Those hospitals that are undesignated are often ill-prepared to care for major and severe trauma patients. The hospitals that are designated are usually designated at the lowest level and have very limited resources.

Level IV Trauma Centers are basically "stabilize and transfer" fa-